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Published to advance the Science of cold-blooded vertebrates

MIGRATION NOTES OF FISHES, 1916, FROM ORIENT, LONG ISLAND.

The records mentioned below were all taken from Long Island Sound, unless otherwise noted. Our pounds were removed on December 15. This is a considerably later date than usual, and several new late records were made for the locality. All the measurements given are in total lengths. Most of the species herein listed were either identified or verified at the American Museum of Natural History.

Mustelus canis. Smooth Dogfish. First one taken May 29, four, 36 to 49 inches. Last one taken December 4, one 14 inches. One 14 inches taken November 28, also a 13-inch specimen from Long Beach Bay, November 13. Largest individual of the season was 51 inches, taken on August 18. It is known among the fishers here as "Swing-tail Dogfish."

Carcharias littoralis. Sand Shark. First taken July 6, one 4 feet. Last taken October 21, one 24 inches.

Squalus acanthias. Spined Dogfish. Last one taken in Spring, May 17, one 30 inches. First one taken in Fall, October 20, five 36 inches. On October 23, 500 were taken in two traps. Were of daily occurrence till December 12. It is called here Horned Dogfish.

Raja erinacea. Common Skate. A permanent

resident in Orient waters. It is washed ashore in winter gales. Several seasons ago we kept a trap in Gardiner's Bay throughout the winter, and this species was secured at all the weekly hauls. It is taken more commonly during the hot summer weather in shallow water traps than in the deep water gears. Known as "Tobaccobox" and less frequently as "Old Maid."

Raja laevis. Barn-door Skate. First one taken May 8, one 48 inches. Last one taken December 14. Regular, but not common, throughout the summer. A specimen taken December 12 had the following measurements: Length, 52 inches; expansion across wings, 38 inches. The local name is "Sharp-nosed Skate."

Acipenser sturio. Common Sturgeon. One record, December 8, one 4 feet.

Elops saurus. Big-eyed Herring. One October 30, 14 inches. We usually obtain one or two records each Fall, averaging about this size.

Etrumeus sadina. Round Herring. First taken May 24, one 3 inches. Last taken December 8. It appeared in large schools in September and continued in abundance till November 20. It was noted daily till December 1. On December 4, 100 were taken. The average length was 5 to 6 inches in the schools and the largest taken 7 inches.

Brevoortia tyrannus. Bunker. First taken May 5, fourteen. Last taken December 15. The young, ranging in length from $11\frac{1}{2}$ to 6 inches, were very common from October 29 to the end of the season. Not so many young have been noticed before in fifteen years. The last adult was taken November 25, in Long Beach Bay.

Stolephorus mitchilli. Common Anchovy. Arrived June 23, in large schools. Last taken December 14. Abundant from October 1 to December 4.

Osmerus mordax. Smelt. Last one taken in Spring, June 9. First one taken in Fall, October 2.

Also the following summer records: July 14, two; August 28, two. All about 7 inches in length.

Synodus foetens. Lizzard Fish. One taken October 9, 12 inches in length. This is the only example of this species the writer has secured from Orient.

Tylosorus marinus. Billfish. First taken May 7, two 14 inches. Last taken November 19. One was taken on November 13, and one November 10. Largest specimen of the year was 28 inches, taken September 28.

Hyporhamphus roberti. Half-beak. First taken July 12, one six inches. Last one taken November 6, three. Two were taken July 17, and one, October 18. All these latter records were near 9 inches in length.

Mugil curema. White Mullet. First taken June 4. Last taken December 13. Large schools of young were observed late in September and through October.

Sphyraena borealis. Northern Barracuda. First one taken June 20. Last one taken October 19, one 12 inches. This fish was extremely rare during the season. Only one specimen was taken after September 15. In 1915, it occurred daily through October and most of November.

Scomber scombrus. Common Mackerel. First taken May 23, two, 6 inches. Last taken December 14, three, 7 inches. Was common in schools till November 22, ranging in size from 7 to 10 inches. There were swarms of young on June 23, about 2 inches long. By July 17, these had obtained a length of 3 inches.

Scomber colias. Thimble Mackerel. First taken July 14. Last taken December 12, three, 5 to 8 inches.

Sarda sarda. Bonito. One record. One 12 inches on September 15. This is a very uncommon

species in Orient waters. Occasionally a dozen may be taken at one haul, or single individuals up to twenty in a season.

Scomberomorus maculatus. Spanish Mackerel. One September 6, 18 inches in length, with a weight of $1\frac{3}{4}$ lbs. is the only record. It is at present a very rare species. In 1915, no record was made. In 1914, four, of 2 lbs. each, were caught at one time. In 1913, one individual of 6 inches. It is forty-five years since the last big run occurred at Orient.

Xiphias gladius. Swordfish. A specimen weighing 200 lbs was taken in Gardiner's Bay, July 1. A rare visitor near Orient.

Seriola zonata. Banded Rudder Fish. First one taken August 1. Last one taken October 28. Specimens range from 3 to 6 inches.

Decapterus punctatus. Scad. First taken August 29. Last taken November 17. Specimens are from 2 to 6 inches. It is most common in October.

Caranx hippos. Jackfish. First taken July 30. Last taken October 30. Specimens $2\frac{1}{2}$ to 8 inches. More common than usual, 20 to 30 sometimes being captured at a single lift.

Vomer setipinnis. Lookdown. First September 29. Last taken October 19. Specimens are $1\frac{1}{2}$ to 3 inches.

Trachinotus carolinus. Pompano. One 7-inch specimen, October 30, is the only record. More than one record a year is an exception.

Pomatomus saltatrix. Bluefish. First adult taken June 23, and the last, October 3. Young "snappers" were common till November 1, and the last taken November 28. Young individuals from 1 to 2 inches in length were common in the Sound on July 6, but had entirely disappeared by the 15.

Rhombus triacanthus. Butterfish. First one taken May 15, two 8 and 10 inches. Last one taken December 14. Young specimens from 1 to 4 inches

were common in the Fall, till December 1. It is an abundant species and better known as "Shiner."

Centropristes striatus. Sea Bass. First one taken May 3, and the last, a specimen of $2\frac{1}{2}$ inches, in Long Beach Bay, on December 7. The last adult was taken on October 18.

Orthopristis chrysopterus. Pigfish. One taken June 29, $9\frac{1}{2}$ inches. The first specimen in several years and the largest record taken here.

Stenotomus chrysops. Porgy. First one taken May 15, two 8 and 10 inches. Last one taken December 4. There was a great abundance of young from October 20 to December 1. From ten to twenty thousand ranging from 1 to 3 inches would collect in a trap over night.

Cynoscion regalis. Weakfish. First one taken May 17, two 13 and 14 inches. Last one taken December 8, three, 4 to 7 inches. Six were taken on November 27. The last adult was taken on October 30, weighing 4 lbs. The largest individual of the season had a weight of 14 lbs.

Leiostomus xanthurus. Lafayette. First one taken September 2. Last one taken November 28. Specimens ranging from 2 to 12 inches. The specimen of 12 inches, taken on September 27, weighed $\frac{3}{4}$ lb., and is the largest I have record of. September 16 one was taken $10\frac{1}{2}$ inches. On October 21, three 9-inch specimens were caught. Three were taken on the date of November 27.

Menticirrhus saxatilis. Kingfish. First one taken May 15, one 10 inches. Last one taken December 8. There were numerous November records from 3 to 7 inches.

Chaetodipterus faber. Spadefish. One taken October 2 was 16 inches in length, 9 inches deep, weight $3\frac{3}{4}$ lbs. One October 4, about the same size and a third specimen on October 6, 12 inches in length.

Balistes carolinensis. Triggerfish. One on November 11, 10 inches.

Monacanthus hispidus. Filefish. First one taken September 10. Last one taken November 22.

Lagocephalus laevigatus. Rabbitfish. A specimen of 6 inches November 1.

Spheroides maculatus. Swellfish. First one taken May 29, two 6-inch. Last one taken December 15. Young of 1 to 3 inches were frequently taken through November and first of December. Last adult taken October 28.

Myoxocephalus aeneus. Pigmy Sculpin. Last one in Spring taken June 8. First one taken in Fall, November 4. Three females were taken on November 20, that measured 7 inches each. Of the form called *M. mitchilli* the following records, all from Long Beach Bay, were taken: two November 25, (first); one December 2; four, December 4. All of these were uniform in size and very conspicuous with their bold black markings amongst the numbers of Brassy Sculpins in a boat.

Myoxocephalus octodecimspinosus. 18-spined Sculpin. Last one taken in Spring, June 9. First one taken in Fall, October 1. Common throughout the winter. Known locally as "Horned Fish."

Prionotus carolinus. Sea Robin. First one taken May 17. Last one taken November 29. Six adults were taken October 31. All those following were young from 2 to 5 inches.

Merlucius bilinearis. Whiting. One 4 inches was taken March 3. Three individuals were taken on June 9, and one on July 13, 6 inches in length. Arrived from north, October 3, and was taken regularly to December 15.

Pollachius virens. Pollack. Young individuals from 2 to 6 inches were taken all through the summer. On May 29, one weighing 21 lbs., with a length of 36 inches was secured. Another of 14 lbs. was

taken on June 14. Adults are exceedingly rare in local waters.

Urophycis regius. Codling. The following summer records were made: one, May 19; one, June 9; one, August 11. Averaging about 7 inches.

Urophycis tenuis. Codling. Last taken in Spring, May 6. First taken in Fall, September 25; was common by October 3, which is much earlier than usual.

Paralichthys dentatus. Summer Flounder. First one taken May 4. Last one taken December 15, a splendid specimen of 15 lbs. One of 22 inches was taken on November 30. November 27, four were secured from 28 to 30 inches.

ROY LATHAM,
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FISHES FROM THE VIRGIN ISLANDS, WEST INDIES.

A small collection made by Mr. A. D. Brown in 1878 was recently sent to me for study, by Mr. C. F. Silvester, of Princeton University. Only one example is with definite locality, and that reads St. Thomas, July 18, 1878. This is one of the larger islands, and due east about forty miles from Porto Rico. As no fishes have previously been reported from the Virgin Islands, the following list is offered:

Myrophis punctatus Lutken. *Hemiramphus brasiliensis* (Linnaeus). *Holocentrus adscensionis* (Osbeck). *Caranx latus* Agassiz. *Trachinotus glaucus* (Bloch). *Epinephelus striatus* (Bloch). *E. adscensionis* (Osbeck). *Lutianus synagris* (Linnaeus). *Ocyurus chrysurus* (Bloch). *Haemulon plumieri* (Lacepede). *Bathystoma aurolineatum* (Valenciennes). *B. striatum* (Linnaeus). *Calamus calamus* (Valenciennes). *C. kendalli* Evermann and Marsh. *Upeneus maculatus* (Bloch). *U. martinicus* Valenciennes. *Sparisoma aystrodon* Jordan and